

Glenn Research Center, Environmental Programs Manual

Chapter 3 – WATER POLLUTION CONTROL

NOTE: The current version of this Chapter is maintained and approved by the Environmental Management Office (EMO). The revision date for this chapter is July 2003. If you are referencing paper copies, please verify that it is the most current version before use. The current version is maintained on the Glenn Research Center intranet at <http://osat-ext.grc.nasa.gov/emo/pub/epm/epm-contents.pdf>. Approved by: EMO Chief, Michael Blotzer {mailto: Michael.J.Blotzer@grc.nasa.gov}.

PURPOSE

This chapter provides the policies and requirements for design, construction, modification, and operation of Glenn Research Center (GRC) facilities contributing waterborne wastes to the sanitary, storm, and industrial waste systems. The provisions herein are in accordance with the national efforts to improve water quality through prevention, control, and abatement of water pollution from Federal activities in the United States.

APPLICABILITY

This chapter is applicable to all personnel at Lewis Field and Plum Brook Station (PBS) including, but not limited to, civil servants, contractor personnel, and students.

DEFINITION

IWS Industrial Waste Sewer: The IWS is not a chemical treatment facility. It is a separate drainage system, apart from the storm and sanitary sewer systems, which contains holding basins to allow for the separation of water and oil so proper disposal can be accomplished.

BACKGROUND

Section 402 of the Clean Water Act (CWA) established an effluent permit system known as the National Pollutant Discharge Elimination System (NPDES). The NPDES constitutes the nation's central mechanism for controlling pollution of waterways and lakes. Under the CWA, it is illegal for any person, including Federal agencies, to discharge pollutant from a point source without a permit.

Permits

National Pollution Discharge Elimination System (NPDES)

Lewis Field and Plum Brook operate under separate NPDES water discharge permits issued by the Ohio EPA. The permits specify the discharges that are allowed, pollutant limitations, and the monitoring and reporting requirements. The Environmental Management Office (EMO) performs reporting and monitoring. Any discharge not allowed under these permits is a violation of the CWA.

Storm Water Permit

The Lewis Field facility has received a permit to discharge storm water runoff, with monitoring and reporting requirements similar to those in the NPDES permit. A Storm Water Pollution Prevention Plan (SWP3) has been prepared for Lewis Field, which identifies sources of pollution and contamination at the facility, and determines improved actions and practices to prevent or control the pollution of storm water discharges. The SWP3 is to be implemented as required by our permit. At Plum Brook Station, stormwater Construction Permits are required for any construction project which disturbs over one acre of land.

POLICY

It is Glenn policy that the design, maintenance, operation, and changes to the Lewis Field and Plum Brook sewer systems be planned, controlled, and monitored in a manner that assures that environmental pollution regulations will not be violated.

REQUIREMENTS

Design and Construction

All facilities shall be designed and constructed in accordance with the criteria and standards set forth in the authorities cited above. All facilities shall comply with local, State, and Federal regulations and codes applicable to the collection, transmission, and disposal of waterborne wastes contributing to the sanitary, storm, and industrial waste systems. When the possibility of an accidental release of contaminated waste exists, adequate safeguards shall be included in such designs. Due consideration shall be given to effluent limits established for release to adjacent creeks or rivers and to municipal sewage systems.

Control or treatment facilities may be required in order to prevent such accidental or normal releases.

The environmental impact and assessment of design, construction, and modification activities shall be evaluated in the initial planning stages. Requirements governing the preparation and review of assessments of the environmental impact of GRC activities are contained in [Chapter 2 National Environmental Policy Act](#), of this manual.

Except for domestic type sewage originating at standard plumbing fixtures, all designs for new facilities and modifications to existing facilities where connections are to be made to any GRC waterborne waste disposal system shall be submitted for review, evaluation, and approval of the EMO and the Process Systems Safety Committee. The approval, documented by the issuance of a safety permit, must be obtained before procurement, installation, or modification is begun.

Violations of design or construction requirements or water pollution control standards should be reported to the Chief of FD for evaluation and corrective action.

OPERATION AND MAINTENANCE

Facilities

Facilities will be operated and maintained to achieve compliance with the standards described in the paragraph under Requirements for Design and Construction; and in regulations issued by the authorities cited in the; Authority; section of the chapter.

The Lewis Field and Plum Brook Station sewer systems will be operated and maintained to satisfy the following intended purposes:

Storm sewer system - Surface and subsurface rainwater runoff, e.g., from roadways, parking lots, roof drains, and yard basins.

Industrial Waste Sewer (IWS) system (Lewis Field only) . Waste waters containing oil and grease. Lewis Field attempts to minimize the discharge of pollutants at each entrance to the IWS. Many of the buildings that generate wastewater containing petroleum products have oil separators that remove floating and settleable materials before entering the IWS system. Contamination of this system with solvents and other chemicals violates the proper and intended use of the IWS.

IWS wastewater discharges to a sanitary sewer system.

Sanitary sewer systems - Domestic type sewage and gray water originating at standard plumbing fixtures and laboratory sinks.

Radioactive Wastes - All contaminated wastewater that contain radioactive materials will be disposed of in accordance with applicable Ohio EPA and U.S. NRC regulations and licenses and requirements of the Midwest low-level Radioactive Waste Disposal Compact. In Cleveland, the Health Physics Team will control the disposal of radioactive wastes. At Plum Brook, radioactive waste disposal will be controlled in accordance with established Plum Brook Reactor storage license requirements and procedures approved by the GRC Radiation Safety Officer.

UTILITY MANHOLE:

Rainwater and/or groundwater accumulated in a utility manhole that is free from oil sheen, odor, color, debris, and sediment can be discharged to a storm sewer. An evaluation of water must be made prior to discharge.

CONSTRUCTION SITE:

Best Management Practice must be planned and implemented at construction sites to eliminate sediment discharge to storm sewers.

Accumulation of rainwater in the excavation site should be avoided. In the event rainwater is accumulated in the excavation site the proper dewatering is needed.

For an excavation site where the soil is clean, accumulated rainwater with sediment control must be pumped to the storm sewer.

For an excavation site where the soil is a solid or hazardous waste, accumulated rainwater must be tested based on the contaminants of soil. The rainwater will be handled accordingly upon analytical results as recommended by EMO.

COOLING TOWER:

It is the policy of EMO that cooling tower maintenance will be performed in a manner that complies with all relevant laws and regulations. In order to implement this policy, EMO recommends that prior to cooling tower maintenance activities, EMO be notified in advance to establish proper procedures.

RESPONSIBILITIES

All Employees

Each employee is responsible for assuring no release of toxic or hazardous materials or reportable quantities of other materials to the sanitary, storm, and industrial waste sewer systems.

Any person who becomes aware of any spill, or the inadvertent or unauthorized release of toxic or hazardous materials to any GRC sewer system, shall report the incident by dialing 911, the Glenn Dispatch for Lewis Field and the Comms Center for Plum Brook Station.

All facilities shall comply with the local, State, and Federal regulations and codes applicable to the collection, transmission, and disposal of waterborne wastes to sanitary, storm, and industrial waste sewer systems.

Environmental Management Office (EMO)

EMO sets Glenn environmental pollution standards based on the requirements of local, State, and Federal regulations and permits. EMO updates these standards as required by changes in such regulations and permits. At Plum Brook Station, questions concerning application of standards should be directed to the Plum Brook Station Environmental Manager.

EMO defines a sampling and testing program to monitor wastes in the sewer systems, the purpose of which is to detect, control, and eliminate pollution. At Plum Brook, the PBMO, in consultation with the Plum Brook Station Environmental Manager, is responsible for assuring that the appropriate sampling and testing programs are conducted.

EMO is the focal point for the submission for applications of all water permits.

EMO maintains the Lewis Field and Plum Brook Station National Pollution Discharge Elimination System (NPDES) permits, and monitors according to the specifications included in the permits.

EMO coordinates with outside agencies as appropriate.

EMO provides technical direction for the operation of the sewer systems and carries out the sampling and testing programs. EMO provides requesters with waste disposal technology information, analytical chemistry, and monitoring metrology for handling and disposing of wastewater.

Facilities Division (FD)

FD maintains configuration control of the sanitary, storm, and industrial waste systems. No changes to a sewer system are to be made without the concurrence of the FD. FD maintains and operates the systems.

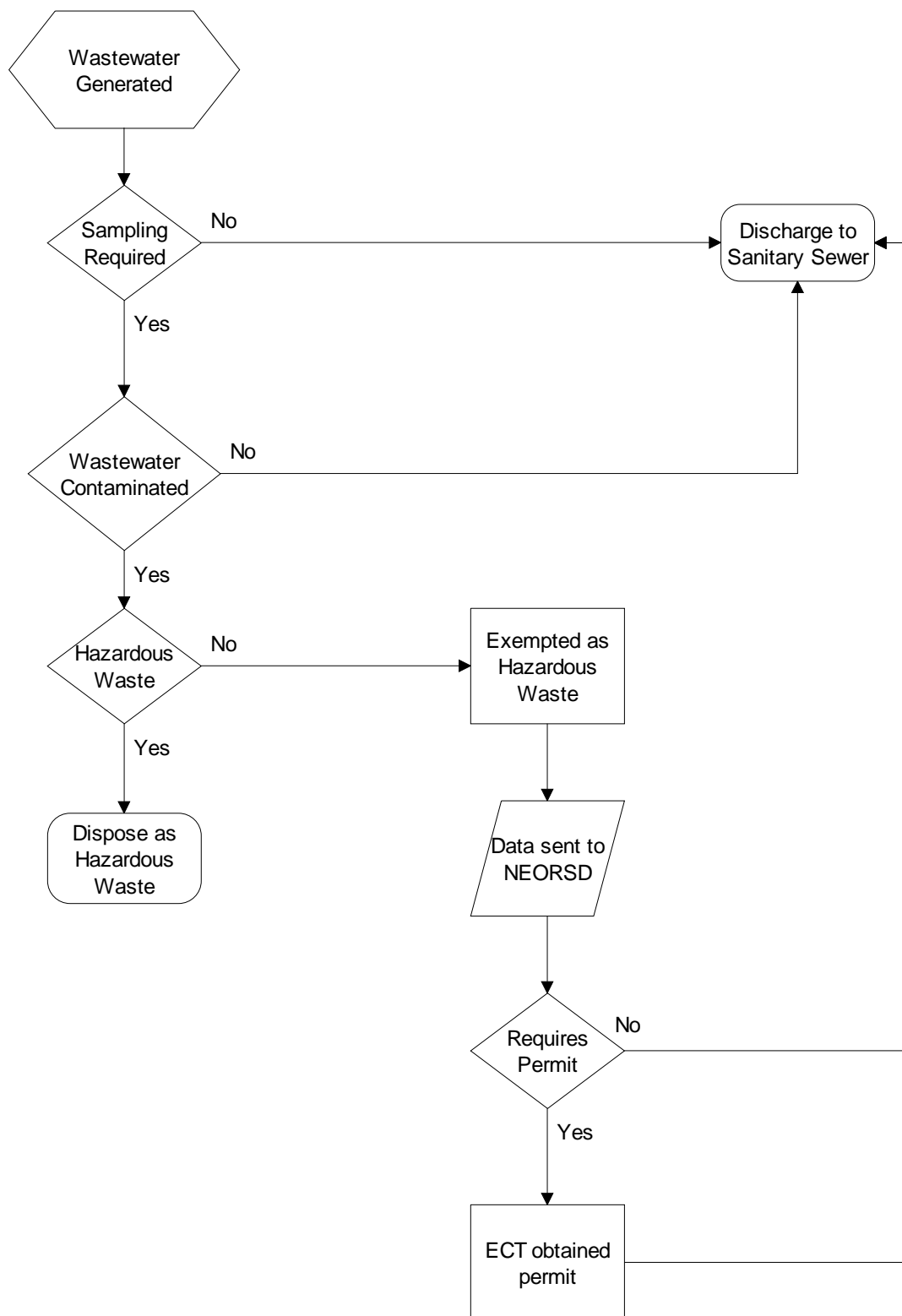
At Lewis Field, FD is responsible for the physical operation and maintenance of the process water systems and the industrial waste system. This responsibility includes maintenance of the oil separator pits, oil skimming operations, and sludge removal operations. At Plum Brook, the PBMO is responsible for the physical operation and maintenance of the sanitary sewer systems and process water systems.

FD must ensure that contractors plan and implement Best Management Practice at construction sites.

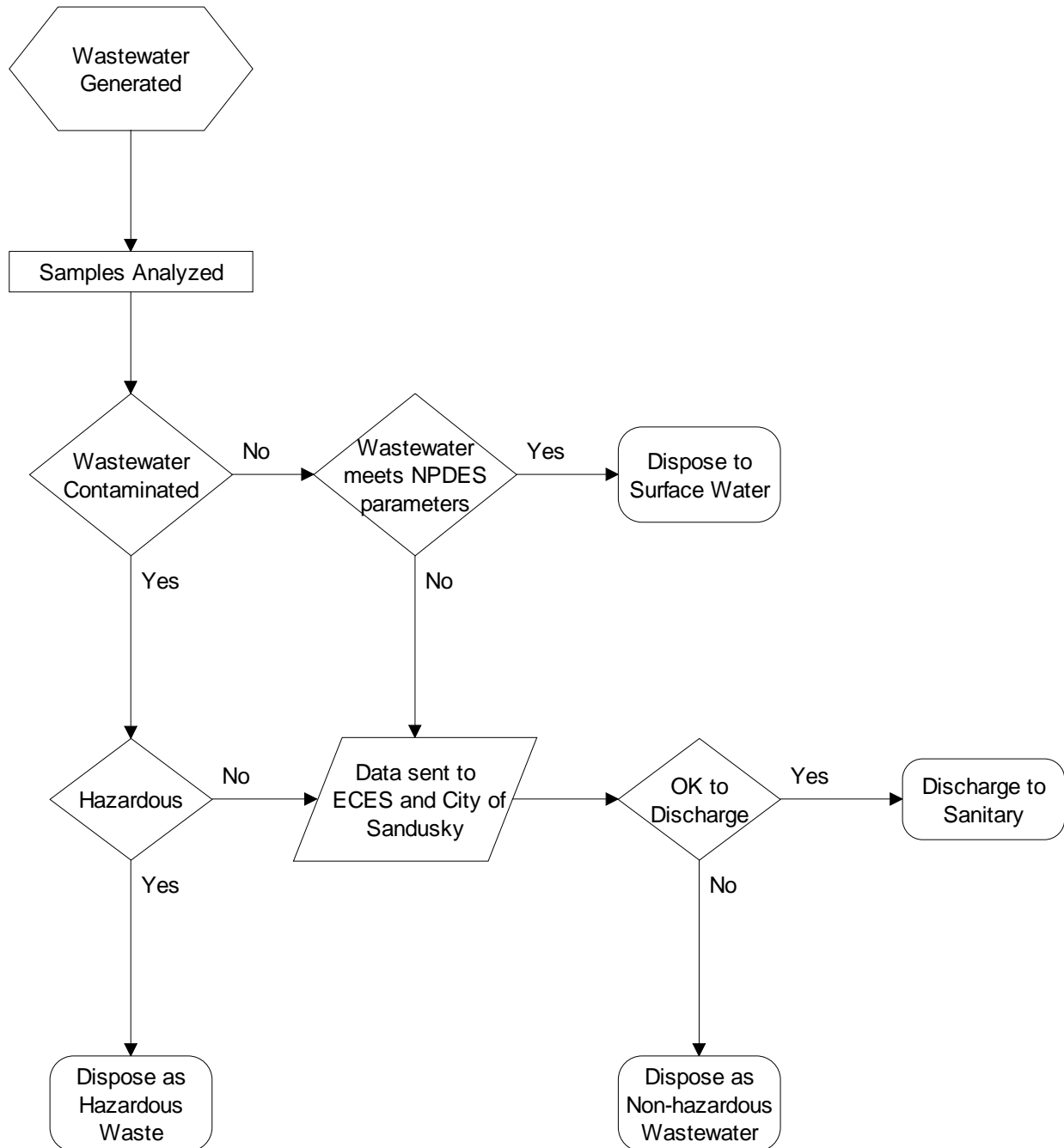
Glenn Dispatch/Plum Brook Comms Center

At Cleveland, Emergency Dispatch is the focal point of communications in initiating the emergency spill containment and cleanup plans. At Plum Brook the Comms Center performs this function.

***Disposal of Wastewater
GRC - Lewis Field***



***Disposal of Wastewater
GRC - Plum Brook Station***



RECORDS

- NPDES Permit
- NPDES Permit Monthly Reports

REFERENCES

- Federal Water Pollution Control Act
- Executive Order No. 12088, Federal Compliance with Pollution Control Standards, October 13, 1978
- Toxic Substances Control Act
- Title 40, Code of Federal Regulations, Part 112, Oil Pollution Prevention, December 11, 1973.
- Spill Prevention Control and Countermeasure Plan for Lewis and Plum Brook
- Title 40, Code of Federal Regulation, Part 265 Subpart D, Contingency Plan and Emergency Procedures.
- Title 40, Code of Federal Regulation, Part 300.33, National Oil and Hazardous Substances Pollution Contingency Plan.
- Lewis and Plum Brook Station Contingency Plans
- Title 10, Code of Federal Regulations, Part 20
- Emergency Preparedness Plan
- Glenn Storm Water Pollution Prevention Plan

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